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ABSTRACT

THE ARTICLE DISCUSSES HOW THE WISHES AND NEEDS OF A UNIVERSITY FOR BETTER DESIGNED UNIVERSITY BUILDINGS MAY BE COMMUNICATED TO ARCHITECTS AND ENGINEERS. THE AUTHOR DESCRIBES HIS OWN EXPERIENCE WITH WRITTEN PROGRAM REQUIREMENTS AND ARCHITECT FIELD STUDIES, AND REPRODUCES A CHECK LIST USED BY ARCHITECT AND UNIVERSITY STAFF IN A HOUSING PROJECT. (FPO)

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THE WRITTEN PROGRAM

(An Effective Way of Communicating with the Architect)

by

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THE WRITTEN PROGRAM

(An Effective Way of Communicating with the Architect)

The purpose of this article is not to discuss planning of college and university buildings; rather, it is to set forth some ideas on how to convey the wishes and needs of a university to architects and engineers in order that these planners may design better university buildings.

Modern college buildings are much more complex than were their counterparts of a few years ago. The addition of air conditioning would make this so if there were no other reason. In addition, attention must be given to the use of closed circuit television; the use of audio, radio and video equipment; the use and disposal of radioactive materials; automatic fire-detecting devices; central control panels; and many other mechanical and electrical devices that were unheard of in buildings not too many years ago. Light intensities that would have been considered entirely adequate a short time back are now considered totally inadequate. Furthermore, staff members are visiting on other campuses more than ever. It is seldom that an employee of a school, who after visiting a number of other schools, does not return to his own campus with ideas on how to do it "bigger and better", and if not bigger and better, at least with ways to do it differently. All of this, coupled with the ever-increasing cost of construction, not only is making planning more complicated and difficult, but is making the cost of construction something to really worry about.

There are thousands of architectural firms in this country. The great majority of them possess the skill, artistic judgment, and technical know-how to design university structures. The same is true of electrical, mechanical, and structural engineers. The problem is to design structures that will serve adequately the complex uses which will be made of the many components of the buildings.

No matter how good the architect or engineer may be he cannot know, and should not be expected to know, how to plan a building to serve a large number of specialists without considerable help and assistance from the "specialist-clients" themselves. Thus, the real problem is how to transmit literally hundreds of messages from the university staff to the architect conveying the staff's wishes, needs, likes and dislikes, interests, theories, problems, and a multitude of other items in such a way that these items eventually can be translated satisfactorily into concrete and steel. The better this transmission of information is accomplished from the university staff to the architect and his engineering associates, the better the building will serve its purpose. The success of a building project, and the owner's satisfaction, may well be determined by how successfully the transfer of need and intended use by the owner is made to the architect.

There are several ways of working with the architect during the important early stages when the architect is attempting to familiarize himself with the basic requirements of his new job. The least desirable way is to hire the architect and let him start to work before any real thinking and planning have been done by the university staff directly concerned. A project planned in this way could end up as a good looking, structurally-sound building, but almost

totally lacking in those details that will become very important to its occupants as soon as the building is put into use.

Another method is for the university staff to prepare sketches and drawings to give to the architect. This method, while having some advantages, is likely to freeze thinking and to force the architect into using predetermined shapes and forms. It also has the disadvantage of still not giving to the architect as much information as he should have on scores of details.

Yet another method is to prepare a "Written Program" on each project. This "Program" can be, and often is, prepared before the architect is selected. In a written program attention is given to the size, use, and special requirements desired in the various areas of the building. Such a program cannot be the work of any one person or "special-interest" group of persons. It must be prepared by those who are to use the buildings and by members of the physical plant staff who are to operate and maintain the buildings. Such a program, carefully prepared on each project and supplemented by general instructions that are more or less applicable to all building projects, will enable the architect to produce acceptable preliminaries in the shortest length of time. Having to prepare a written program in advance of plans is good for the future occupants of a building. In order to get approval of their proposals from the university administration, they must set forth clearly how they intend to use their future facilities. This organization of thought and procedure might make for better teaching and research, and it definitely produces more functional buildings.

At Brigham Young University a written program is prepared on every building project. We believe in this method of communicating our ideas to our architects, and the architects we have worked with also like it. We supplement

each individual written program with general instructions, and require the architect on each project, in company with members of the university staff, to visit other campuses to study the good and bad features of similar projects already built and in operation.

To make any system work effectively requires organization. At Brigham Young University our planning work is centered in the Department of Physical Plant. This department has three major functions: planning, construction, and maintenance and operation. The department is in charge of a director, who reports to the President of the University. In addition, there is a permanent Campus Planning Committee of five men, appointed by the President. This committee is advisory only and makes all of its recommendations to the President. It reviews all plans for major campus development and interviews and recommends architects and engineers for all campus projects requiring such services.

The committee meets regularly each week. Deans, directors, and department chairmen meet with the committee to discuss their building problems. Through this system of reviews and discussions, committee members have become very familiar with the space requirements of the University. The committee thus exerts a large amount of influence over individual project committees as to building sizes, extent of development, and cost of projects. It reviews all building programs, and meets with the President and his Administrative Council to discuss them. It also reviews all plans submitted by architects and engineers and when satisfied with the plans, recommends to the President that they be accepted. The Director of Physical Plant is the chairman of the committee.

Individual project committees are essential in planning major buildings. These committees are not to be confused with the Campus Planning Committee. A project committee of from five to seven persons is appointed for each building that is to be planned, but the Campus Planning Committee works with all of them. These project committees, working with the Campus Planning Committee and with the Department of Physical Plant, determine the many items required on each project and assemble them into written programs. Once the architect on a project starts to work, the project committee works closely with the Campus Planning Committee, and with the architect, through the adoption of preliminary drawings. After this planning stage, the project committee has less frequent contact with the architect, but is available when needed. During construction of the building, the project committee works with the University Purchasing Department in selecting furniture and equipment. As soon as the building is accepted and occupied, the project committee for that particular building is dissolved.

Three important steps used in acquainting architects and their engineering associates with the requirements of Brigham Young University are: (1) a "Written Program" for each major project, (2) a set of general instructions to architects and engineers, prepared by the Department of Physical Plant, and (3) a field trip to campuses with buildings similar to the one that is to be planned.

WRITTEN PROGRAMS

The "Written Program," discussed in a general way earlier in this article, is such an effective way of transmitting information to an architect that the index taken from the Brigham Young University "Program Requirements

for the Married Student Housing Project, July 1959" is given in order to acquaint the reader with the scope of programming. The Table of Contents lists the following:

TABLE OF CONTENTS

General Statement of Requirements

- Location of Project
- Map of Approximate Location

Space Requirements

- Apartments
- Administration, Maintenance Shops and Laundry

Facility Requirements

- Site Development
- Parking Facilities
- Size and Shape of Buildings
- Utilities
  - Electrical Power
  - Water
  - Heat
  - Gas
  - Sewage
  - Telephones
- T. V. Antenna with Apartment Connections
- Trash and Garbage
- Mail Boxes
- Materials of Construction
- Entrances
- Stairways and Elevators
- Air Conditioning
- Fire and Safety

Financial Aspects of Project

- Project Costs
- Rental Rates
- Amortization
- Operating Budget

Description of Rooms and Facilities

Apartments
Administration, Maintenance Shops and Laundry
Playground for Children

INSTRUCTIONS TO ARCHITECTS AND ENGINEERS

The Department of Physical Plant at Brigham Young University has just revised its original 116-page book entitled, Instructions to Architects and Engineers. This book contains information that is largely applicable to any building being planned for the University, forms and proceedings we want the architects and engineers to use, and specific information on items that we are trying to standardize. These instructions supplement the "Written Program" for each project and save much time because they do not need to be written into each new program as it is prepared. It is impossible to go into detail here, but the following listing of the Table of Contents will indicate the type of general information we want all architects to have before starting a project for the University:

TABLE OF CONTENTS

Introduction

Instructions to Architects and Engineers

- Initial Site Survey and Report
- Schematic Drawings
- Preliminary Drawings
- Working Drawings
- Construction Period
- Recommended Forms
  - Architect's Request for Payment
  - Architect's Inspection Report

Recommended Specification Form

General Information
Typical Index
Typical Detail Specification
Outline of Instructions to Bidders
Outline of Form of Proposal
Outline of Supplemental General Conditions
Map of Campus
Performance and Payment Bond
Contract for Construction
General Conditions
Progress Estimate

Utility Painting and Identification
High Temperature Water Distribution
Electrical Power Distribution
Fire and Safety Regulations
Door Numbering
Water Connection
Sewer Connection
Audio, Radio and Video Equipment
Telephones
Clocks and Class Bells
Sprinkler Systems
Catch Basins and Gutters
Trash and Garbage Removal
Restrooms and Equipment
Custodial Rooms
Mailroom
Materials of Construction
Entrance Ways
Stairways
Drinking Fountains
Lighting
Air Conditioning
Roofing and Flashings

FIELD TRIPS

When an architect is selected and is ready to go to work, he visits the University. At this time we sit down with him, go over all of the requirements as listed in the "Written Program," and discuss the general instructions with him. He visits the building site and is given full topographic information. After

the architect has studied and has become familiar with the requirements of the project, he and two members of the University staff may visit several schools with similar buildings. One member of the University staff is from the Physical Plant Department and one is a member of the project committee. Having the needs so clearly before him, the architect is in a good position to know what he is looking for. Thus, more helpful information is obtained than would be the case if the trip were made prior to programming and briefing.

It is not enough to go out and look on these trips. To get sufficient information to reach factual conclusions, it is necessary to see and get information, on the same items, at several schools. To insure that this will be done, a check list of things to see is made before the trip begins. When the inspection team returns, a detailed report is prepared complete with sketches, photographs, and written materials. These trips and reports supplement the other information the architect has been given, and he is then ready to start schematic studies. The following is a reproduction (condensed in the interest of saving space) of the check list used by the architect and two members of the University staff in surveying married-student housing projects at several institutions, before actual planning was started:

MARRIED-STUDENT HOUSING STUDY
July 1959

UNIVERSITY_____
Location_____
Enrollment_____ Graduate Students_____
Married Students_____ Faculty _____

HOUSING
Number Students Housed on Campus_____
Married_____ Single_____
Number Resident Students_____ Nonresident_____

MARRIED-STUDENT HOUSING PROJECT

Number of Projects_____

Number of Student Apartments per Building_____

One-Bedroom_____Two-Bedroom_____Three-Bedroom_____

Number of Faculty Apartments_____

One-Bedroom_____Two-Bedroom_____Three-Bedroom_____

Number of Families per Building_____

Costs_____

Rent Amount

One-Bedroom_____Two-Bedroom_____Three-Bedroom_____

Includes_____

RELATED FACILITIES

Recreation-Children

Equipment_____

Size_____

Fenced or Not_____

Number of Families per Area_____

Recreation-Adults

Description and Size_____

Equipment_____

Number of Families per Area or Room_____

Nursery_____

Laundry

Equipment in Room_____

Size of Room_____

Number of Families per Room_____

Floor Plan_____

Parking and Roads

Width of Roads_____

Location of Parking_____

Parking Spaces per Family_____

Administration and Custodial Facilities

Size of Spaces_____

Floor Plans_____

UTILITIES

Heat_____

Electricity_____

Garbage and Waste Removal_____

Telephones_____

Mechanical Rooms_____

SHOPPING CENTER

Services_____

Ownership_____

Size_____

Construction_____

(MARRIED-STUDENT HOUSING Contd.)

BUILDING
- Size_____
- Cost_____
- Construction_____
- Number of Floors_____
  - Below Grade_____

ROOMS - Floor Plan_____
- Bathroom
  - Height of Tile on Walls_____
  - Ceiling and Wall Materials_____
- Storage Space_____
  - Size_____
  - Items Stored_____

ENTRANCES
- Doors_____
- Mats_____

WINDOWS
- Frame Material_____
- Type_____
- Air Conditioning Facilities_____

WALLS
- Exterior Material_____
- Interior Material_____

FLOORS
- Material_____
- Covering_____

CEILING
- Height_____
- Material_____

ROOF
- Pitch_____
- Material_____

CORRIDORS OR OUTSIDE BALCONIES
- Width_____
- Ceiling Height_____

LIGHTING
- Type_____
- Foot Candles_____

(MARRIED-STUDENT HOUSING Contd.)

ELEVATORS
Number_____
Type_____

COLOR
Quality of Color Design_____
Person Doing Color Design_____

STAIRS
Tread Material_____

FIRE PROTECTION
Equipment in Building_____
Alarm System_____